

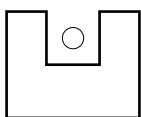
# Magnetic Field Lab

Name: \_\_\_\_\_ Section: 4BL-\_\_\_\_ Date performed: \_\_\_\_/\_\_\_\_/\_\_\_\_

Lab station: \_\_\_\_\_ Partners: \_\_\_\_\_

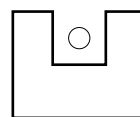
## Part A

Measurements (for each run, indicate which side of the magnet is red and the direction of the current ( $\odot$  or  $\otimes$ )):



$$L_1 = \text{_____} \pm \text{_____}$$

$I$ (A)	scale (gwt)	$F_{\text{mag}}$ (gwt)
0		XXXX



$$L_2 = \text{_____} \pm \text{_____}$$

$I$ (A)	scale (gwt)	$F_{\text{mag}}$ (gwt)
0		XXXX

Attach  $F_{\text{mag}}$  vs.  $I$  graphs from Excel.

$$\text{slope}_1 = (\text{_____} \pm \text{_____}) \frac{\text{gwt}}{\text{A}}$$

$$B_1 = (\text{_____} \pm \text{_____}) \frac{\text{gwt}}{\text{A cm}}$$

$$= (\text{_____} \pm \text{_____}) \text{ mT}$$

$$\text{slope}_2 = (\text{_____} \pm \text{_____}) \frac{\text{gwt}}{\text{A}}$$

$$B_2 = (\text{_____} \pm \text{_____}) \frac{\text{gwt}}{\text{A cm}}$$

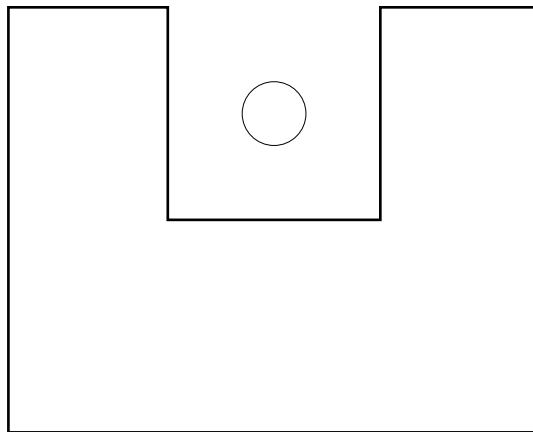
$$= (\text{_____} \pm \text{_____}) \text{ mT}$$

Calculations and comparison:

## Part B

Choose one of your runs from Part A and indicate the following on the diagram below:

- which side is red
- direction of current
- does scale reading increase or decrease with increasing current
- direction of force on magnet
- direction of force on wire
- direction of magnetic field
- which side is north



Explain your reasoning:

The red side of the magnet is [ north / south ].